

STROLLER FRAME STRUCTURE

FIELD OF THE INVENTION

The present invention relates to a stroller frame structure that has a first linkage
5 assembly pivotally bridged on a front wheel rack and a rear wheel rack, and a second
linkage assembly driven by a handle tube to actuate and fold the first linkage assembly
in V-shape, to move the front wheel rack and the rear wheel rack close to each other for
folding.

BACKGROUND OF THE INVENTION

Conventional strollers for carrying a baby usually have a linkage bar consisting of
rods pivotally engaging with one another. A release mechanism is used to control a joint
assembly located at the juncture of the rods. The joint assembly has a latch mechanism
which may be released or latched to collapse the stroller to a folding position or unfold
15 the stroller to an extended position. For instance U.S. patent No. 5,772,235 discloses a
convertible stroller. However, it has a complicated frame structure consisting of
coupling linkage bars. This is quite difficult to assemble. As it has many rod elements,
the total weight of the frame structure is greater. This is not easy to carry and move.
Folding movement cannot be smoothly executed and could result in a troublesome
20 operation.

SUMMARY OF THE INVENTION

In view of the problems set forth above, such as complicated frame structure and a
not smooth folding operation, the present invention aims to provide a stroller frame

structure that includes a front wheel rack, a rear wheel rack, a first linkage assembly, a coupling dock, a handle tube, an armrest and a second linkage assembly that are pivotally coupled with one another. The handle tube has a lower end movable by the second linkage assembly, to drive the first linkage assembly to move the front wheel rack and the rear wheel rack close to each other in the middle or are extended thereby to achieve a smooth folding operation.

The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings. The description and embodiments serve reference and illustrative purpose only, and shall not be considered as a limitation of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic view of the invention in an extended condition.

FIG. 2 is a schematic view of the invention in a folding condition.

FIG. 3 is a schematic view of the release mechanism of the invention.

FIG. 4 is a schematic view of the release mechanism of the invention in an operating condition.

FIG. 5 a schematic view of the release mechanism of the invention coupled with a remote controller.

FIG. 6 is a schematic view of the invention in a folding condition.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, the stroller frame structure 90 according to the invention

mainly includes a front wheel rack 1, a rear wheel rack 2, a first linkage assembly 3, a coupling dock 4, a handle tube 5, a release mechanism 6, an armrest 7 and a second linkage assembly 8 that are pivotally coupled with one another. The frame structure may be in an extended condition (as shown in FIG. 1) and a folding condition (as shown in FIG. 2).

In one embodiment of the invention, the first linkage assembly includes a front seat rack bar 31 pivotally coupled with the front wheel rack 1 and a rear seat rack bar 32 pivotally coupled with the rear wheel rack 2. The front seat rack bar 31 and the rear seat rack bar 32 are pivotally bridged by pivot coupler 33 so that they can jointly form a sitting area for seating a child when extended. The front wheel rack 1 and the rear wheel rack 2 may also be folded in V-shape when the stroller frame 10 is collapsed.

The second linkage assembly 8 is pivotally coupled with the first linkage assembly 3. The second linkage assembly 8 includes a driving member 81 and a rotary member 82. The rotary member 82 pivotally bridges the handle tube 5 and a rear leg tube. The driving member 81 pivotally bridges the rotary member 82 and the first linkage assembly 3 (in this embodiment, the driving member 81 has one end pivotally coupled on the pivot coupler 33 of the first linkage assembly 3).

The handle tube 5 includes a pair of handle racks 51. The release mechanism 6 is located on the handle racks. The handle racks 51 are pivotally coupled with the armrest 7 and the rotary member 82 of the second linkage assembly 8. The handle racks 51 have a free distal end. Referring to FIGS. 3, 4 and 5, the release mechanism 6 is mounted on the handle tube 5. It includes an actuation member 61, a linkage member 62 (may be a steel bar or a flexible wire), an elastic element 63 and a latch element 64. The coupling dock 4 is fixedly mounted on the rear wheel rack 2. The latch element 64 is located on the free distal end of the handle rack 51 and connected to the actuation member 61 through the linkage member 62. The elastic element 63 can maintain the latch element

64 in a latched condition with the coupling dock 4 on the rear wheel rack 2. By pulling the actuating member 61, the linkage member 62 may be driven to move the latch element 64 away from the coupling dock 4 (referring to FIG. 4). In another embodiment, a remote controller 60 may be used to connect the linkage member 62 to operate the release mechanism single-handed (referring to FIG. 5).

Referring to FIGS. 1 and 6, the front wheel rack 1 has one end pivotally coupled with the armrest 7 and another end coupled with a front wheel 10 of the stroller. The front seat rack bar 31 of the first linkage assembly 3 is pivotally coupled in a middle portion between the two ends thereof.

The rear wheel rack 2 has one end pivotally coupled with the armrest 7 and another end coupled with a rear wheel 20 of the stroller. The rear seat rack bar 32 of the first linkage assembly 3, the rotary member 82 of the second linkage assembly 8 and the coupling dock 4 are pivotally coupled on the rear wheel rack between the two ends thereof. As the first linkage assembly 3 is bridged on the front wheel rack 1 and the rear wheel rack 2, the second linkage assembly 8 can drive the front seat rack bar 31 and the rear seat rack bar 32 in V-shape for folding, so that the front wheel rack 1 and the rear wheel rack 2 may be moved close to each other.

By means of the elements and construction set forth above, when the stroller frame 90 is in extended condition, the latch element 64 of the release mechanism 6 is latched on the coupling dock 4 to make the elements and rods and bars in an interlocking condition. To fold the stroller frame 90, pull the latch element 64 through the release mechanism 6 to escape the coupling dock 4, and push the handle tube 5 forwards, the rotary member 82 of the second linkage assembly 8 turns with the handle tube 5 about the pivotal point of the rear wheel rack 2 to move the driving member 81, therefore the first linkage assembly 3 are folded in V-shape, and the front wheel rack 1 and the rear wheel rack 2 are moved close to each other.

In summary, the stroller frame structure according to the invention is simply structured and very convenient. It provides a significant improvement on conventional strollers.

5 While the preferred embodiments of the invention have been set forth for the purpose of disclosure, modifications of the disclosed embodiments of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments, which do not depart from the spirit and scope of the invention.